Location ID: 100-8-* Field Representative(s): P.S. Egan, J. Kirby

Northing: 223036.40 Easting: 413337.51

Date Started: 06/07/89 Date Completed: 7/12/89 (plugged & abandoned)

Drilling Method: Mud/Air Foam Rotary Drilling Contractor: Larion Drilling

Driller: J. Gower

Total Depth Borehole: 401' Total Depth Well Casing: 390.46

Total Depth Surface Casing: 70.5

Diameter Well Casing: 4" Diameter Surface Casing: 10"

Length of Bottom Blank: 5.28"

Type of Screen: Regular Strength (0.02 slot)

Screen Interval: 364.59' to 385.32'

Water First Detected: not detected Water Level Open Borehole: 308' (G.L.)

Water Level Cased Borehole: 311.70 (7/12/89, 3:00 p.m.)

Bentonite Gel: 10

Quik-Foam Use: 2 gallons

Estimated Water Use: 8400 gallons total water use
3789 gallons measured in mudpit
4661 gallons introduced to borehole during drilling

Well Casing: No casing installed.

4in x 3ft SCD 40 PVC:		stock SS centralizers:	
4in x 5ft SCD 40 PVC:	1	custom SS centralizers:	1
4in x 10ft SCD 40 PVC:	26	4"x2' SS locking riser:	1
4in x 20ft SCD 40 PVC:	1	4" SS locking cap:	1
Total SCD 40 PVC pipe:	285 ft	4" SS female cap:	
4in x 3ft SCD 5 SS pipe:			
4in x 5ft SCD 5 SS pipe:	1	4in x 5ft SCD 10 SS pipe:	
4in x 10ft SCD 5 SS pipe:		4in x 10ft SCD 10 SS pipe:	
4in x 20ft SCD 5 SS pipe:	4	4in x 20ft SCD 10 SS pipe:	
Total SCD 5 SS pipe:	85 ft	Total SCD 10 SS pipe:	0 ft

Well Completion:

100# bags 16/40 sand:	9	bags	
100# bags 10/20 sand:		bags	
100# bags 8/14 sand:		bags	
100# bags 8/20 sand:	31	bags	
94# bags cement:	70	bags	40 bags cement and 2 bags gel for plugging and abandoning well.
5 gal. buckets bentonite:	3	buckets	
50# bentonite powder:	4	bags	

Surface Casing:

94# bags cement:	35	bags
50# bags bentonite powder:	4	bags

Pertinent Field Notes:

06/07/89 Spud 100-B and drill 0'-70' ; mud rotary, 12 3/4" bit. 850 gal. water and 10 bags gel used to mix mud. - Egan

06/08/89 Ream borehole using mud rotary, 0'-70', to 16" diameter. Install 10" x 70.5' steel surface casing and grout. Used 1100 gal. water to ream. Used 35 bags cement and 4 bags of gel for grouting. - Egan

06/09/89 Demobilize mud rotary equipment and tools from well pad. Steam clean and mobilize B.E. rig and tools for air foam rotary drilling. Suspend bit and drill pipe within surface casing.- Egan

06/12/89 Drill, air foam, 9 7/8" bit, 70'-197'. No sign of water. Formation is alluvium. Stop and blow hole, trip completely out so a water level can be checked in the a.m. - Egan

06/13/89 Check for water. borehole sloughed from 197' to 189.8'. No water in borehole. Continue drilling, 196'-237'. No sign of water. Lithology change from alluvium to Orejon andesite at ≈ 210. 1650 gal. water used. - Egan

06/14/89 Check for water before drilling. Water at 220.6' (16.4' of head). Borehole must be producing very little water because this water is difficult to see in discharge. A small volume is observed after each drill pipe connection is made, but that is all. T.D. hole at 296'. Andesite from 275'-296' is slightly more porphyritic than above. 1400 gal. water used for drilling. - Egan

06/15/89 Borehole is dry. Continue drilling. Drill 296'-316'. No sign of water, no change in lithology of cuttings. 900 gal. water used for drilling. - Egan

06/16/89 Blow hole before drilling. No sign of water. Continue drilling, 316'-361'. Used 1800 gal. water. - Kirby

06/19/89 Sound water at 308.5' (at 0830 a.m.). Drill 361'-401'. No noticeable water. Blow hole, leave site. Used ≈ 600 gal. water. - Kirby

06/20/89 Sound water at 363.5 (0830 a.m.). There is 37.5' of head after 18 hours recharge. Move rig off hole - secure well. Will monitor water recovery in borehole than decide if borehole will be completed as a monitor well. - Egan

06/21/89 Sound water at 337.7 (0930 a.m.). - Egan

06/22/89 Water level at 319.85' (1215 p.m.). - Egan

06/23/89 Water level at 313.30' (1230 p.m.). - Egan

06/26/89 Water level at 311.70' (1027 a.m.). - Contaldo

06/27/89 Water level at 311.60' (0855 a.m.). - Egan

07/10/89 Water level at 308.0'. - Kirby

07/11/89 SWL - 308.0'. Install 285' of PVC and 85' stainless steel casing in borehole. Screen from 364.59' to 385.32 (20'). No bottom plug. Install gravel pack to 4.86' above top of screen. Install a 2.82' bentonite upper plug (1/4" pellets). Let set overnight. - Kirby

07/12/89 Install filler sand to 9.52 above SWL. Begin grouting. While adding grout, casing joint at 188' imploded due to grout pressure. This pushed the upper 188' of casing approx. 20' out of borehole. It then settled to 6' below surface. The upper 188' of casing was removed (along with may PVC fragments wedged inside) from borehole. Unsuccessfully attempted to fish out remaining casing (grout was beginning to cure). - Kirby

07/13/89 Plug 100-B-* using 40 bags cement and 2 bags gel (grout not to surface). - Kirby

08/11/89 Grout to surface. Set brass cap.